Work Order ID 112245

112245

February-13-14 1:22:43 PM

Item ID: D4148-1 **Accept** *N900040100* **Setup Start** *NS1*
Revision ID: **Stop** *NS2*
Item Name: Crosstube Lug Plate, Fwd

Start Date: 30/01/2014 **Start Qty:** 40.00 *40*
Required Date: 30/01/2014 **Req'd Qty:** 40.00 *40*
Reference:

Cust Item ID:
Customer:

Approvals: **Process Plan:** M **Date:** 14-02-13 **Tooling:** _____ **Date:** _____
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Run Start *NR1*
Stop *NR2*

SCRAP

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp

Draw Nbr	Revision Nbr
D4148	E

100 0.00

100

Waterjet

FLOW CNC Waterjet

Memo

Cut as per dwg D4148
Prog Rev:_____
Dwg Rev:_____

ISSUE PO PO23041
POSSIBLE SUPPLIER:LOEBSACK WATERJET

Deburr as required

0.00

MJ 2/6/14

105 Receive & Inspect for Damage & Mat'l Certs 0.00

105

Packaging

Packaging

Memo 0.00

2/6/14 (40)

PTO

DQA: cjd Date: 14/06/24

QA Closed: JKH Date: 14/6/16

WORK ORDER NON-CONFORMANCE / UPDATE

DART AEROSPACE

Work Order update only ☐

Work Order: 112245

Part No. D4148-1

NCR No. NCR 14-3872

DISPOSITION

Rework	☐
Scrap	☒
Use-as-is	☐
Suspected Unapproved	☐

AGAINST DEPARTMENT/PROCESS

Skid-tube	☐	Crosstube	☐	Water Jet	☐	Engineering	☐
Machining	☐	Small Fab	☐	Prod. Eng. Coor.	☐	Quality	☐
Thermoforming	☐	Finishing	☐	Rec/Store/Packaging	☐	Other	☐
Large Fab	☐	Composite	☐	Supplier	☒		☐

Root Cause		Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design	☐	14/5/16	10	40	Scrap part hole dimension is over size 0.252 / 0.259 critical Dimension RC Supplier / NCR 14-3872	+0.003 -0.001 DAS 16 9-89 QS2042 14/05/16	Scrap and destroyed	DAS 27 9-89 14/5/16	DAS 27 9-89 14/5/22	DAS 16 9-89 QS2042 14/05/16
Doc/Data	☐									
Equip/Tooling	☐									
Handling/Pre	☐									
Material	☐									
Operator	☐									
Offset/Setup	☐									
Process	☐									
Supplier	☒									
Training	☐									
Transport	☐									
Unapproved	☐									

FAULT CATEGORY

Landing Gear

☐	Bending
☐	Centre Not Concentric
☐	Cracks
☐	Crimp/Kink/Ripple/Wave
☐	Cuffs
☐	Crushing
☐	Heat Treat
☐	Inspection Strip in Tube
☐	Marks/Chatter
☐	Turning Sequence
☐	Wave/Twist in Tube

General

☐	Bend
☐	BOM/Route
☐	Broken/Damage/Defect
☐	Burrs
☐	Contamination
☐	Countersink
☐	Cut Too Short
☐	Drawing
☐	Drill Holes
☐	Finish
☐	Fit/Function
☐	Folio/Program
☐	Grain
☐	Hardware
☐	Inspection Incomplete/Unqualified
☐	Instructions Incomplete/Unclear
☐	Misaligned/off center
☐	Mislabeled
☐	Misread
☐	Off-set
☐	Out of Calibration
☐	Out of Sequence
☐	Outside Dimensions
☐	Over/Under tolerance
☐	Part Incorrect
☐	Part Lost/Missing
☐	Part Moved
☐	Positioned Wrong
☐	Power Loss/Surge
☐	Pressure/Forced
☐	Set-up
☐	Temperature/Cure
☐	Weld
☐	Wrong Stock Pulled
☒	Other

Supplier

Supplier Non-Conformance Report

Reviewed
DQA:
Date:

Printed on: Friday, May 16, 2014

Details

Raised Date	Status	Owner	Number
5/16/2014	Open	Gregoire, Michael	NCR14-3872
Target Date	**Standard**		**Severity**
5/23/2014			MAJOR

Process	Audit
Quality Inspection	

Raised By Person	Raised Against (Department or Supplier)	Fault Category
Downing, Eric M	Loebsack Waterjet Canada Ltd.	Supplier

Details

PO 23011 form Loebsack waterjet that D4148-1 B112245, D4151-1 B112572, D4151-3 B110308, D4149-1 B112484 are all scrap due to 0.252 +.003 / -.000 measuring 0.250" - 0.260"

Keywords	Product
Document	**Root Cause**
	Supplier

Closed By	Closed Date	Resolution

Corrective Action

Target Date	Owner	Closed Date	Closed By
5/23/2014	Lavoie, Chantal		

Details

Actions

Number	Owner	Target Date	Completed Date
Details		**Response**	
1	Gregoire, Michael	5/23/2014	
Contact Supplier and obtain corrective action			
2	Downing, Eric M	5/23/2014	
Scrap D4149-1 B112484 qty x60pcs			
3	Downing, Eric M	5/23/2014	
scrap D4151-3 B110308 qty x40pcs			

4	Downing, Eric M	5/23/2014	
scrap D4151-1 B112572 qty x40pcs			

5	Downing, Eric M	5/23/2014	
Scrap D4148-1 B112245 qty x 40pcs			

Verification & Review

Target Date	Owner	Closed Date	Closed By
5/23/2014	Hammond, Kelsey		

Details
All Actions Complete

Actions

Number	Owner	Target Date	Completed Date
Details		**Response**	

Work Order ID 112245

February-13-14 1:22:43 PM

112245

Item ID: D4148-1 **Accept** *N900040100* **Setup Start** *NS1*

Revision ID:

Item Name: Crosstube Lug Plate, Fwd **Stop** *NS2*

Start Date: 30/01/2014 **Start Qty:** 40.00 *40*

Required Date: 30/01/2014 **Req'd Qty:** 40.00 *40*

Reference:

Cust Item ID:

Customer:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
115	QC6- Inspect dimensions to drawing	0.00							
115									
QC	**Memo**	0.00							
Quality Control									
125		0.00							
125									
Small Fab	**Memo**	0.00							
Small Fab	DEBURR A/R								
150	Identify as per dwg & Stock Location:_____	0.00							
150									
Packaging	**Memo**	0.00							
Packaging									

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date: Work Order update only ☐

Work Order: _____

Part No. _____

NCR No. _____

DISPOSITION

Rework ☐
Scrap ☐
Use-as-is ☐
Suspected Unapproved ☐

AGAINST DEPARTMENT/PROCESS

Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐
Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐
Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐
Large Fab ☐ Composite ☐ Supplier ☐

Root Cause		Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design	☐									
Doc/Data	☐									
Equip/Tooling	☐									
Handling/Pre	☐									
Material	☐									
Operator	☐									
Offset/Setup	☐									
Process	☐									
Supplier	☐									
Training	☐									
Transport	☐									
Unapproved	☐									

FAULT CATEGORY

Landing Gear

☐ Bending
☐ Centre Not Concentric
☐ Cracks
☐ Crimp/Kink/Ripple/Wave
☐ Cuffs
☐ Crushing
☐ Heat Treat
☐ Inspection Strip in Tube
☐ Marks/Chatter
☐ Turning Sequence
☐ Wave/Twist in Tube

General

☐ Bend
☐ BOM/Route
☐ Broken/Damage/Defect
☐ Burrs
☐ Contamination
☐ Countersink
☐ Cut Too Short
☐ Drawing
☐ Drill Holes
☐ Finish
☐ Fit/Function
☐ Folio/Program
☐ Grain
☐ Hardware
☐ Inspection Incomplete/Unqualified
☐ Instructions Incomplete/Unclear
☐ Misaligned/off center
☐ Mislabeled
☐ Misread
☐ Off-set
☐ Out of Calibration
☐ Out of Sequence
☐ Outside Dimensions
☐ Over/Under tolerance
☐ Part Incorrect
☐ Part Lost/Missing
☐ Part Moved
☐ Positioned Wrong
☐ Power Loss/Surge
☐ Pressure/Forced
☐ Set-up
☐ Temperature/Cure
☐ Weld
☐ Wrong Stock Pulled
☐ Other

Item ID: D4148-1 **Accept** *N900040100* **Setup Start** *NS1*
Revision ID: **Stop** *NS2*
Item Name: Crosstube Lug Plate, Fwd
Start Date: 30/01/2014 **Start Qty:** 40.00 *40*
Required Date: 30/01/2014 **Req'd Qty:** 40.00 *40*
Reference:
Cust Item ID:
Customer:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Run Start *NR1*
Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	QC21- Final Inspection - Work Order Release	0.00							
160									
QC	**Memo**	0.00							
Quality Control									

Ø MF 14-5-22

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date: Work Order update only ☐

Work Order: _____

Part No. _____

NCR No. _____

DISPOSITION

Rework ☐
Scrap ☐
Use-as-is ☐
Suspected Unapproved ☐

AGAINST DEPARTMENT/PROCESS

Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐
Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐
Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐
Large Fab ☐ Composite ☐ Supplier ☐ ☐

Root Cause		Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design	☐									
Doc/Data	☐									
Equip/Tooling	☐									
Handling/Pre	☐									
Material	☐									
Operator	☐									
Offset/Setup	☐									
Process	☐									
Supplier	☐									
Training	☐									
Transport	☐									
Unapproved	☐									

FAULT CATEGORY

Landing Gear

☐ Bending
☐ Centre Not Concentric
☐ Cracks
☐ Crimp/Kink/Ripple/Wave
☐ Cuffs
☐ Crushing
☐ Heat Treat
☐ Inspection Strip in Tube
☐ Marks/Chatter
☐ Turning Sequence
☐ Wave/Twist in Tube

General

☐ Bend
☐ BOM/Route
☐ Broken/Damage/Defect
☐ Burrs
☐ Contamination
☐ Countersink
☐ Cut Too Short
☐ Drawing
☐ Drill Holes
☐ Finish
☐ Fit/Function
☐ Folio/Program
☐ Grain
☐ Hardware
☐ Inspection Incomplete/Unqualified
☐ Instructions Incomplete/Unclear
☐ Misaligned/off center
☐ Mislabeled
☐ Misread
☐ Off-set
☐ Out of Calibration
☐ Out of Sequence
☐ Outside Dimensions
☐ Over/Under tolerance
☐ Part Incorrect
☐ Part Lost/Missing
☐ Part Moved
☐ Positioned Wrong
☐ Power Loss/Surge
☐ Pressure/Forced
☐ Set-up
☐ Temperature/Cure
☐ Weld
☐ Wrong Stock Pulled
☐ Other

Picklist Print

February-13-14 1:22:48 PM

Work Order ID: 112245 *112245*

Parent Item: D4148-1 *D4148-1*

Parent Item Name: Crosstube Lug Plate, Fwd

Start Date: 30/01/2014 **Required Date:** 30/01/2014

Start Qty: 40.00 **Required Qty:** 40.00

Comments: IPP Rev:A 10.06.24 new issue DD verf:EC
IPP Rev:B 10.10.29 as per revC DD verf:EC IPP REV:C
11.03.02 AS PER DWG REV.D DD VERF:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4148-1P		Purchased	No				Each	0.0000		40			
D4148-1P Crosstube Lug Plate, Fwd									**		4/4/14 (40)		

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

DART AEROSPACE

QA Closed: Date: Work Order update only ☐

Work Order: _____

Part No. _____

NCR No. _____

DISPOSITION

Rework ☐
Scrap ☐
Use-as-is ☐
Suspected Unapproved ☐

AGAINST DEPARTMENT/PROCESS

Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐
Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐
Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐
Large Fab ☐ Composite ☐ Supplier ☐

Root Cause		Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design	☐									
Doc/Data	☐									
Equip/Tooling	☐									
Handling/Pre	☐									
Material	☐									
Operator	☐									
Offset/Setup	☐									
Process	☐									
Supplier	☐									
Training	☐									
Transport	☐									
Unapproved	☐									

FAULT CATEGORY

Landing Gear

☐ Bending
☐ Centre Not Concentric
☐ Cracks
☐ Crimp/Kink/Ripple/Wave
☐ Cuffs
☐ Crushing
☐ Heat Treat
☐ Inspection Strip in Tube
☐ Marks/Chatter
☐ Turning Sequence
☐ Wave/Twist in Tube

General

☐ Bend
☐ BOM/Route
☐ Broken/Damage/Defect
☐ Burrs
☐ Contamination
☐ Countersink
☐ Cut Too Short
☐ Drawing
☐ Drill Holes
☐ Finish
☐ Fit/Function
☐ Folio/Program
☐ Grain
☐ Hardware
☐ Inspection Incomplete/Unqualified
☐ Instructions Incomplete/Unclear
☐ Misaligned/off center
☐ Mislabeled
☐ Misread
☐ Off-set
☐ Out of Calibration
☐ Out of Sequence
☐ Outside Dimensions
☐ Over/Under tolerance
☐ Part Incorrect
☐ Part Lost/Missing
☐ Part Moved
☐ Positioned Wrong
☐ Power Loss/Surge
☐ Pressure/Forced
☐ Set-up
☐ Temperature/Cure
☐ Weld
☐ Wrong Stock Pulled
☐ Other

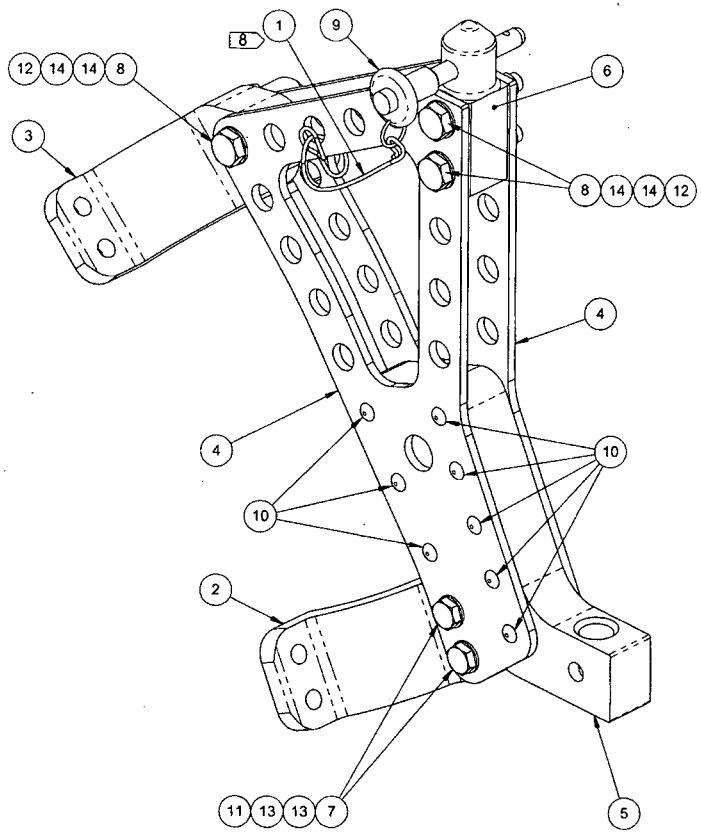
DART AEROSPACE LTD	Work Order:	11225
Description: Fwd Crosstube Lug Plate	Part Number:	D4148-1
Inspection Dwg: D4148 **Rev:** E		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.129	+0.005/-0.001					
Ø0.191	+0.005/-0.001					
Ø0.38	+0.006/-0.001					
Ø0.257	+0.006/-0.001					
Ø0.50	+0.008/-0.001					
0.94	+/-0.030					
4.47	+/-0.030					
0.750	+/-0.010					
8.47	+/-0.030					
8.096	+/-0.010					
5.43	+/-0.030					
5.197	+/-0.010					
4.733	+/-0.010					
0.310	+/-0.010					
0.750	+/-0.010					
0.375	+/-0.010					
1.84	+/-0.030					
0.92	+/-0.030					
3.000	+/-0.010					
0.750	+/-0.010					
0.625	+/-0.010					
1.982	+/-0.010					
0.991	+/-0.010					
0.77	+/-0.030					
1.54	+/-0.030					
2.47	+/-0.030					
0.82	+/-0.030					
3.57	+/-0.030					
1.23	+/-0.030					
0.73	+/-0.030					
0.125	+/-0.010					
Ø0.252	+0.003/-0.000					

Measured by:		Audited by:		Preliminary Approval:	
Date:		Date:		Date:	

Rev	Date	Change	Revised by	Approved
A	10.08.04	New Issue	KJ	
B	10.10.08	Dwg Rev updated	KJ	
C	10.11.05	Dimensions updated per Dwg Rev C	KJ	
D	11.03.08	Dwg Rev updated	KJ	
E	12.02.01	Dimensions updated per Dwg Rev D	KJ	
F	13.11.26	Dwg Rev updated	KJ	



ITEM	QTY -041	P/N	DESCRIPTION
	X	D4148-041	FWD X-TUBE LUG ASSY
1	1	D2690-6	LANYARD
2	1	D3910-1	X-TUBE LUG
3	1	D4091-1	MOUNTING LUG
4	2	D4148-1	FWD X-TUBE LUG PLATE
5	1	D4148-3	STUD RECEIVER LOWER
6	1	D4148-5	EYEBOLT STUD
7	2	AN3C12A	BOLT
8	3	AN4C13A	BOLT
9	1	MS17984-C413	PIN, QUICK RELEASE
10	8	MS20615-4M18	RIVET, SOLID, PAN-HEAD
11	2	MS21043C3	NUT, SELF-LOCKING
12	3	MS21043C4	NUT, SELF-LOCKING
13	4	NAS1149C0332R	WASHER
14	6	NAS1149C0432R	WASHER

112245 MLS
14-01-31

RELEASED
2013 -08- 16

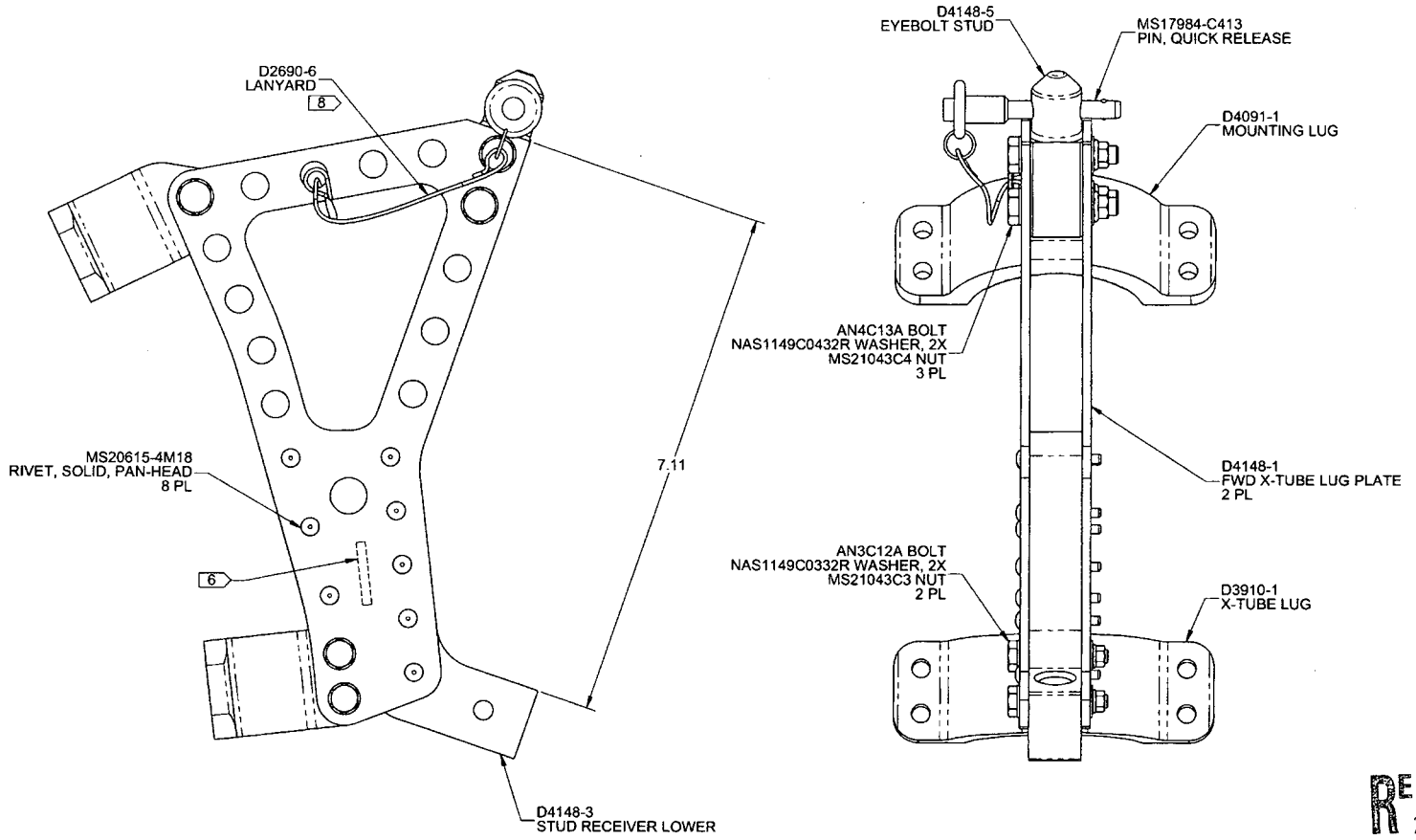
D4148-041 FWD X-TUBE LUG ASSY

NOTES:
1) MATERIAL: N/A
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: N/A
6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4148-041" PER DART QSI 044 6.1
7) WEIGHT: 3.66 lbs
8) ATTACH D2690-6 TO D4148-1 BY LOOPING AROUND A LIGHTENING HOLE FIRST AND THEN SECURE TO MS17984-C413

REV.	DESCRIPTION	BY	DATE
E	B6-4 Ø0.266 HOLE ADDED FOR CARGO TUBE INSTALLATIONS.	AJS	13.07.22
D	HOLE DIA CHANGED TO 0.252" (D6-3); HOLE DIA CHANGED TO 0.250" (C8-5); REPLACED QTY(2) AN3C12A, MS21043C3 AND QTY(4) NAS1149C0332R WITH QTY(2) AN4C13A, MS21043C4 AND QTY(4) NAS1149C0432R (D3-1,C4-2)	SC	11.02.22
C	REDESIGNED D4148-1/-3 TO ADDRESS COMPATIBILITY ISSUES WITH D350-591 SHORT STEPS	MB	10.10.12
B	REPLACED QTY(3) MS20615-4M18 WITH QTY(2) EACH AN3C12A, MS21043-3 AND QTY(4) NAS1149C0332R WASHER (ZN D3-1, B7-2 & B4-2); MS20615-4M18 WAS MS20615-4M20 (ZN D3-1 & B7-2); Ø0.191 2 PL REPLACES Ø0.129 3 PL (ZN D6-3); Ø0.129 7 PL WAS 10 PL (ZN A7-3); Ø0.191 WAS 0.129 (ZN C8-5). REASON: SEE TR-D350-607-2 REV. B.	MB	10.07.05
A	NEW ISSUE	MB	10.06.18

DESIGN	MB	**DART AEROSPACE LTD** HAWKESBURY, ONTARIO, CANADA
DRAWN	AJS	
CHECKED		DRAWING NO. D4148 REV. E
MFG. APPR.		SHEET 1 OF 5
APPROVED		TITLE FWD X-TUBE LUG ASSY SCALE NTS
DE APPR.		
DATE	13.07.22	

COPYRIGHT © 2010 BY DART AEROSPACE LTD
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD

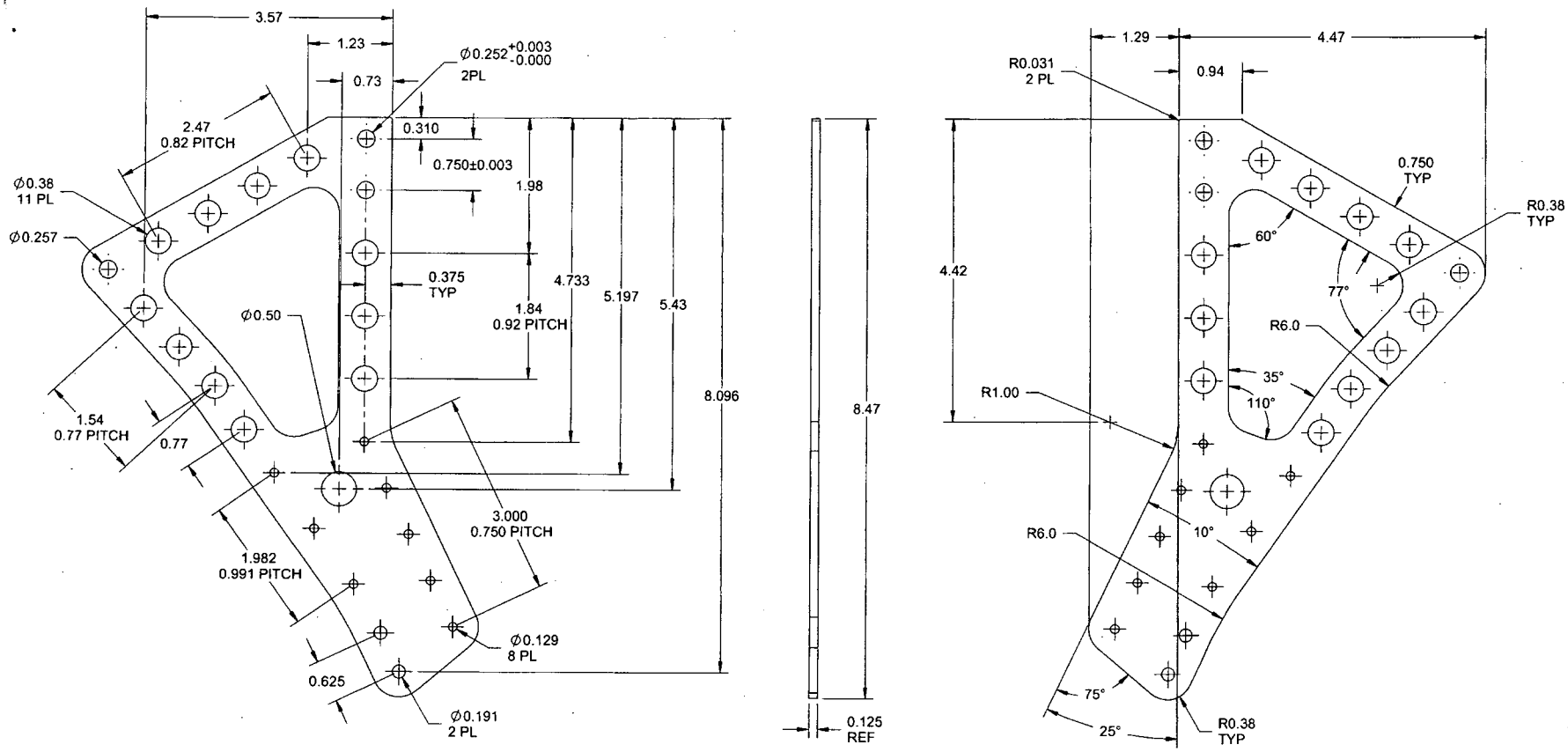


RELEASED
2013 -08- 16

D4148-041 FWD X-TUBE LUG ASSY

DESIGN	MB	**DART AEROSPACE LTD**
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA
CHECKED		DRAWING NO. D4148 REV. E
MFG. APPR.		SHEET 2 OF 5
APPROVED		TITLE FWD X-TUBE LUG ASSY SCALE NTS
DE APPR.		
DATE 13.07.22		

COPYRIGHT © 2010 BY DART AEROSPACE LTD
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD



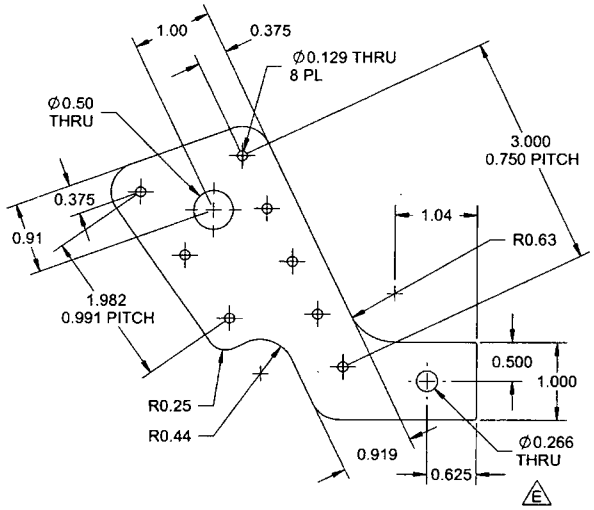
D4148-1 FWD X-TUBE LUG PLATE

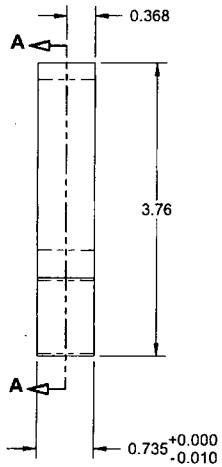
RELEASED
2013 -08- 16

NOTES:
1) MATERIAL: 303/304/316 STAINLESS STEEL 0.125" SHEET ANNEALED 2B FINISH, PER MIL-S-5059 OR AMS 5513/5524 OR ASTM A240 OR ASME SA240 REF DART SPEC M304S11GA OR M303S11GA
2) FINISH: NONE
3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK ALL SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.52 lbs

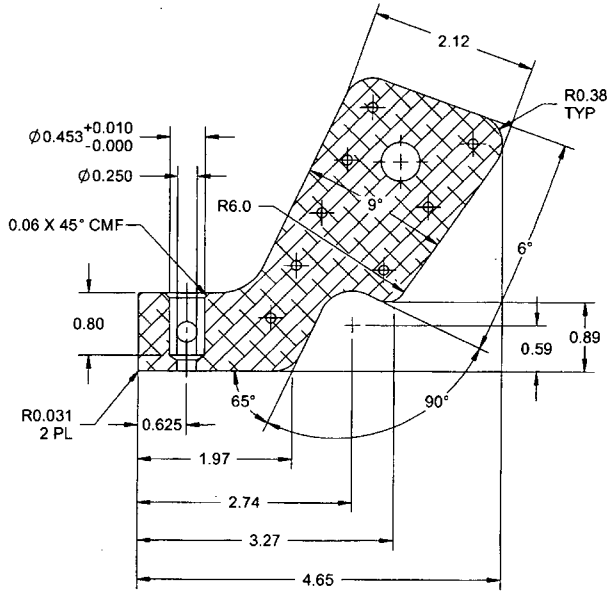
DESIGN	MB	**DART AEROSPACE LTD** HAWKESBURY, ONTARIO, CANADA
DRAWN	AJS	DRAWING NO. D4148 REV. E
CHECKED		SHEET 3 OF 5
MFG. APPR.		TITLE FWD X-TUBE LUG ASSY SCALE NTS
APPROVED		
DE APPR.		
DATE	13.07.22	

COPYRIGHT © 2010 BY DART AEROSPACE LTD
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD

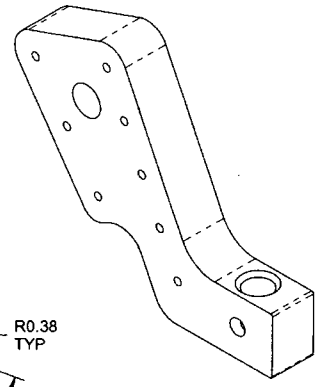




D4148-3 STUD RECEIVER LOWER



SECTION A-A

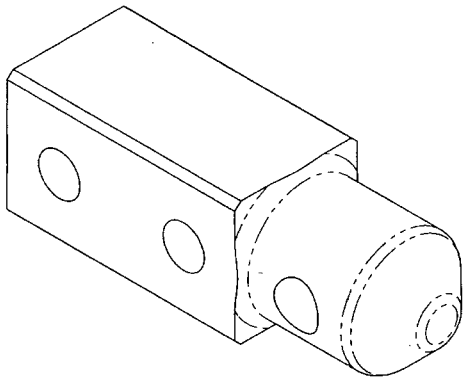


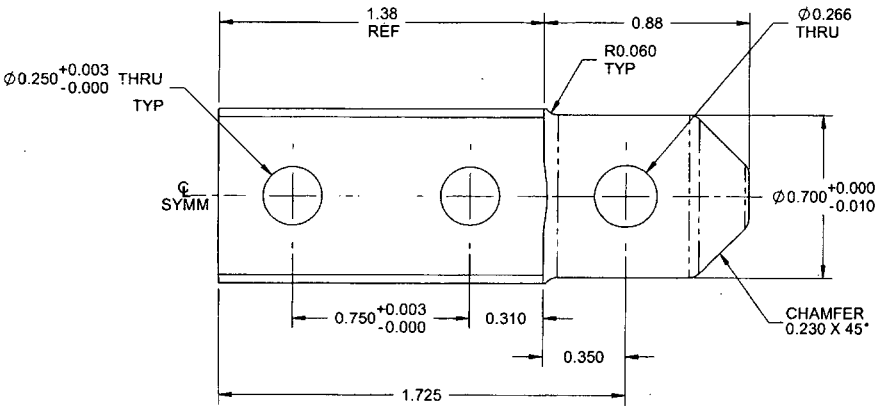
RELEASED
2013 -08- 16

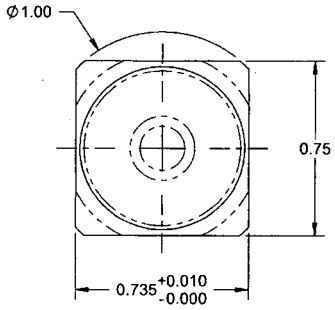
NOTES:
1) MATERIAL: 303/304/316 STAINLESS STEEL BAR PER ASTM A582 OR ASTM A276
REF DART SPEC M304B OR M303B
2) FINISH: NONE
3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK ALL SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 1.51 lbs

DESIGN	MB	**DART AEROSPACE LTD** HAWKESBURY, ONTARIO, CANADA
DRAWN	AJS	
CHECKED		DRAWING NO. D4148 REV. E
MFG. APPR.		SHEET 4 OF 5
APPROVED		TITLE FWD X-TUBE LUG ASSY SCALE NTS
DE APPR.		
DATE	13.07.22	

COPYRIGHT © 2010 BY DART AEROSPACE LTD
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.







D4148-5 EYEBOLT STUD

RELEASED
2013 -08- 16

NOTES:
1) MATERIAL: 303/304/316 STAINLESS STEEL BAR PER ASTM A582 OR ASTM A276
REF DART SPEC M304B OR M303B
2) FINISH: NONE
3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK ALL SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.27 lbs

DESIGN	MB
DRAWN	AJS
CHECKED	
MFG. APPR.	
APPROVED	
DE APPR.	
DATE	13.07.22

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. D4148 REV. E
SHEET 5 OF 5
TITLE FWD X-TUBE LUG ASSY SCALE NTS

COPYRIGHT © 2010 BY DART AEROSPACE LTD
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR DIVULGED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

DART AEROSPACE

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO23011

Purchase Order Date 2/14/2014
PO Print Date 2/14/2014

Order From : VC-LWC001

LOEBSACK WATERJET CANADA LTD.
55 NORTHFIELD DR. E.
P.O.BOX 339

WATERLOO, ONTARIO N2K 3T6

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone

Ship To Contact
Ship To Phone
Ship Via: FedEx PI collect
Ship Acct:

Buyer Michael Gregoire
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency CAD
FOB FCA – (Free Carrier)

					Line Total:		$218.00
14	D4151-3P	Upper Hardpoint Plate	3/28/2014 Yes 3/28/2014	40.00 Each		$5.45	$218.00
	Manufacture as per drawing D4151 rev.c B110308						
					Line Total:		$218.00
15	D4149-1P	Crosstube Lug Plate, Aft	3/28/2014 Yes 3/28/2014	60.00 Each		$18.95	$1,137.00
	Manufacture as per drawing D4149 rev.c B112484						
					Line Total:		$1,137.00
16	D4148-1P	Crosstube Lug Plate, Fwd	3/28/2014 Yes 3/28/2014	40.00 Each		$29.10	$1,164.00
	Manufacture as per drawing D4148 rev.e B112245						

PO Instructions: PROCUREMENT QUALITY CLAUSES
A005 RIGHT OF ENTRY
A008 FIRST ARTICLE INSPECTION (FAI) BY SELLER, (DOCUMENTATION SENT TO DART AEROSPACE)
A012 CHEMICAL AND PHYSICAL TEST REPORTS
A016 PERSONNEL QUALIFICATION
A017 RAW MATERIAL IDENTIFICATION (AS APPLICABLE)
A026 CERTIFICATION OF MATERIAL CONFORMANCE
A042 DART NOTIFICATION BY SUPPLIER

Note:

Loebsack WaterJET Canada Ltd.

55 Northfield Dr., E., Box 339
Waterloo, On. N2K 3T6
(519)570-6590
F. (519)893-4252

Certificate of Compliance

Sold To: DART Aerospace

Purchase Order Nu ID PO23011

Item	Quantity	Part Number	Revision	Description	Mtl. / Thk.	HT Number
6(19)	12	D2803-1	b	BRACKET	6061-T6 / 0.50"	11/12/168D0
23(20)	12	D2803-2	b	BRACKET	6061-T6 / 0.50"	11/12/168D0
5(18)	12	D2804-1	c	BRACKET	6061-T6 / 0.50"	11/12/168D0
4(17)	12	D2804-2	c	BRACKET	6061-T6 / 0.50"	11/12/168D0
10(9)	10	D4093-3	d	BRACKET	6061-T6 / 0.750"	22/11/036D6
20(6)	30	D3065-5	b	STEP LEG	5052-H32 / 0.080"	3C529#2
24(24)	24	D2561P	b	LUG	6061T6 / 0.25"	08/11/010D6
3(18)	150	D2838	c	CLAMP	304 SS / 0.063"	A1303988
17(16)	60	D2519	d	CLAMP	304 SS / 0.063"	A1303988
2(17)	40	D3414-1F	c	CLAMP	304 SS / 0.100"	500400
15(14)	60	D4149-1	c	CROSSTUBE LUG	304 SS / 0.120"	350420
12(11)	40	D4150-3	b	ARM PLATE	304 SS / 0.120"	350420
13(12)	40	D4151-1	c	L HARDPOINT PL	304 SS / 0.120"	350420
14(13)	40	D4515-3	c	U HARDPOINT PL	304 SS / 0.120"	350420
16(15)	40	D4148-1	c	CROSSTUBE LUG	304 SS / 0.120"	350420

This is to certify that the whole of the supplies detailed hereon has been inspected, tested, packed, and unless otherwise stated, conform in all respects with the requirements of the contract or order.

Name: Derek Loebsack Title: President

Sign: Dated: 05-01-14

THYSSENKRUPP MATERIALS NA

Certificate of Mill Test Results

BL PEC-000000-000

PO/Rel

We certify that this is a true copy of the report furnished by the producer of the metal, or data resulting from tests made in approved labs.

Signed by:_____ Pg 1/1

Attn: RICK

PART NO.

1846

ThyssenKrupp Stainless USA

INSPECTION CERTIFICATE
CERTIFICADO DE INSPECCION
ABNAHMEPRUFZEUGNIS
according to / de acuerdo con / nach
EN 10204-3.1

0000032224 /

1 / 1

1 ThyssenKrupp Drive; P.O. Box 13000; Calvert, AL 36513-1309

GILBERT METALS SALES LIMITED
969 DERRY ROAD EAST SUITE 305
MISSISSAUGA, ON L5T 2J8
CANADA

GILBERT METALS SALES LIMITED, MISSISSAUGA

TO-1946

9011477789 / 001

8622B223 / 010

SHEET/PLATE/COIL

ASTM A240/A240M, ASME SA-240 Sec.II Part A Ed.2010
ASTM A480/A480M, ASME SA-480 Sec.II Part A Ed.2010

TYPE 304L/304

3.05 mm x 1,219.20 mm x 2,438.40 mm
0.1200 inch x 48.0000 inch x 96.0000 inch

A00

6051015	32	4,890 lb / 2,218 kg	715000	560420	1000088830	1000088832
6051017	32	4,885 lb / 2,216 kg	715000	560420	1000088830	1000088832
	64	9,775 lb / 4,434 kg				

		% C	% Si	% Mn	% P	% S	% Cr	% Ni	% N
560420	USA	0.026	0.30	1.66	0.027	0.0018	18.05	8.00	0.060

TRANSVERSE

	YS0.2% PSI / MPa	TS PSI / MPa	EL A2" %	HRB		
1000088830	45,800 / 302	83,111 / 642	56.0	92		
1000088832	43,945 / 305	93,111 / 642	56.1	92		

OK
OK

No weld repairs
No intentional additions of Mercury compounds were made or used
Free of radioactive contamination
EU RoHS Directive 2002/95/EC Compliant
Country of Melt as per ISO 3166-1

ThyssenKrupp Stainless USA, LLC
An ISO 9001:2008 certified company

Andrew Palmer
Phone: +1 251 828 3402

13/12/2013